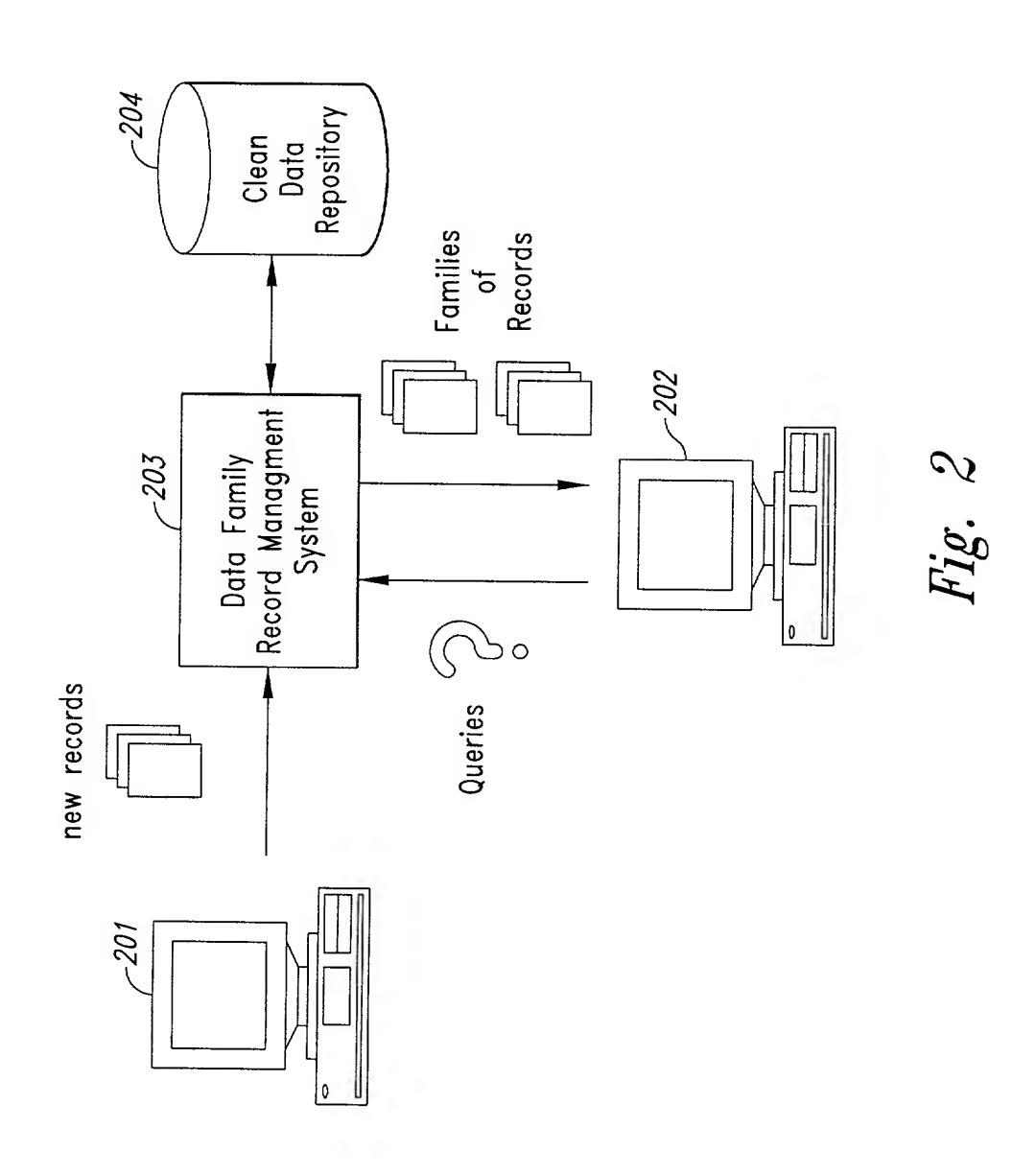


Fig. 1



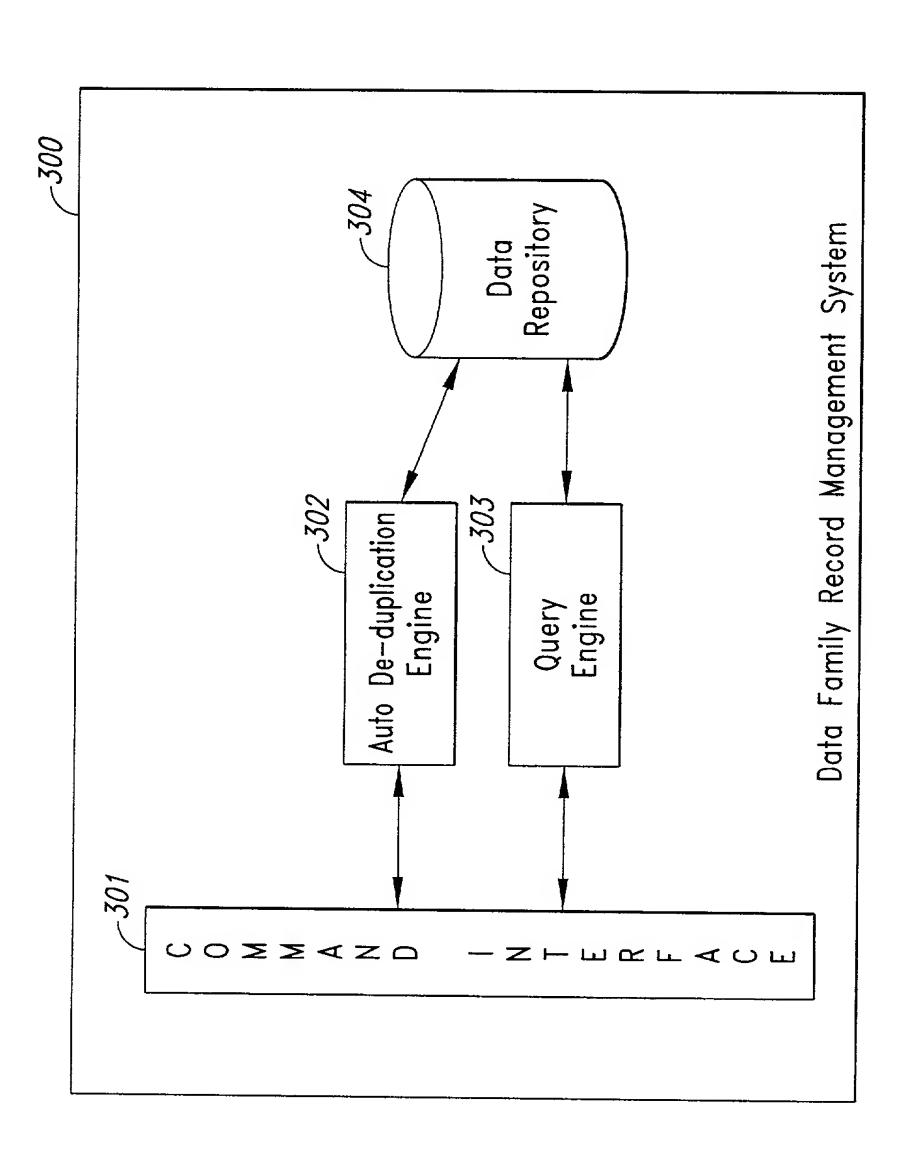


Fig. 3

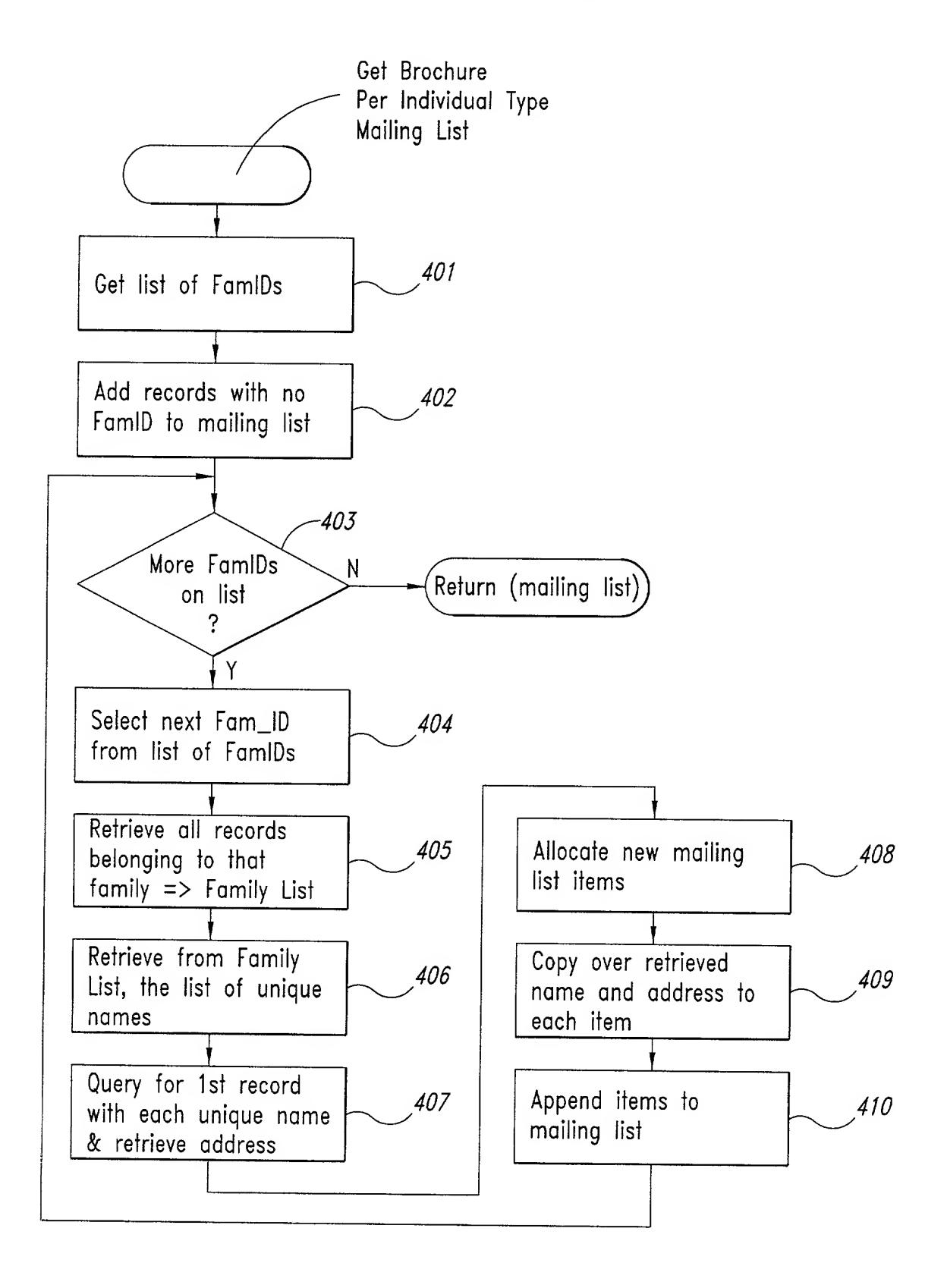


Fig. 4

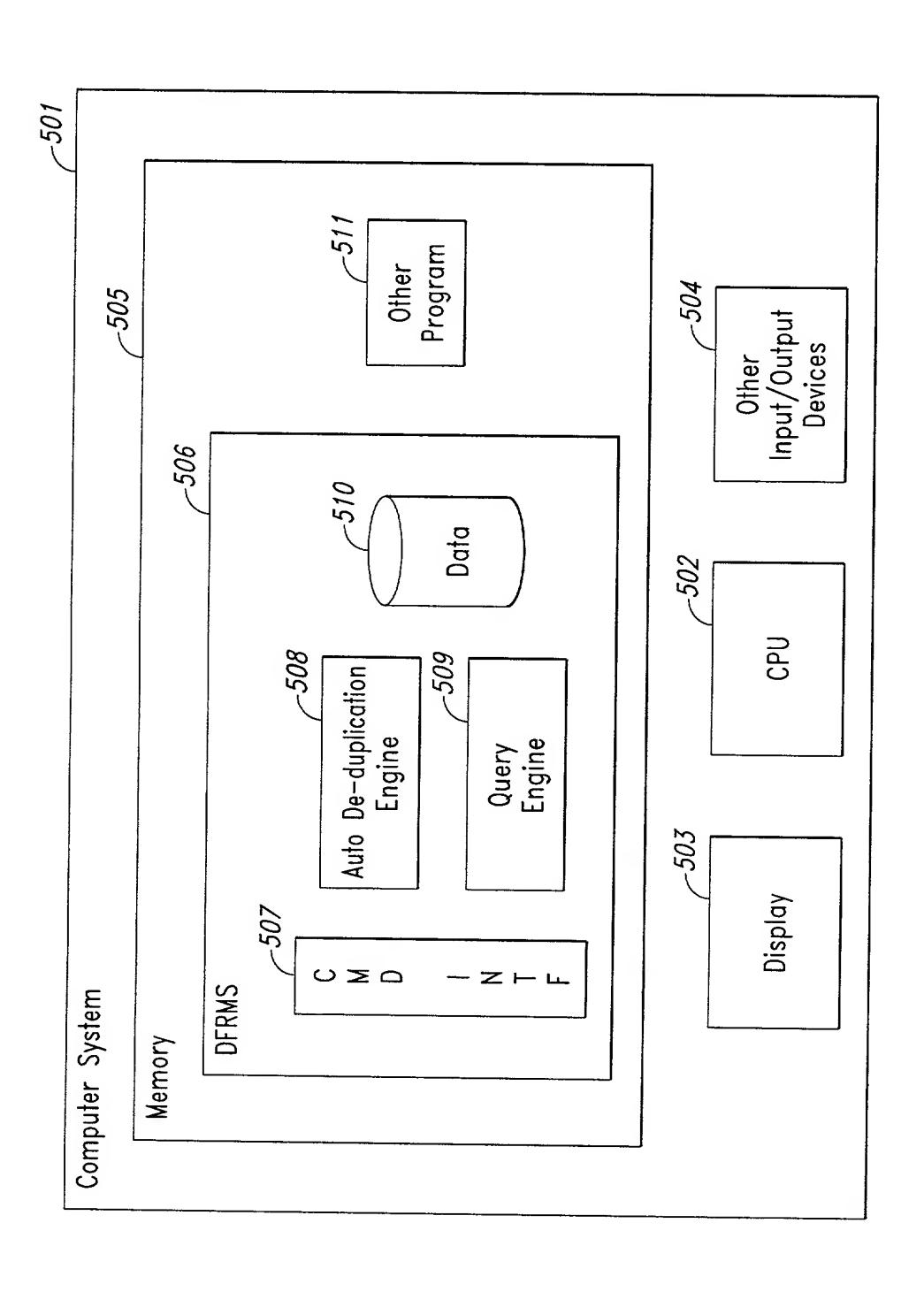


Fig. 5

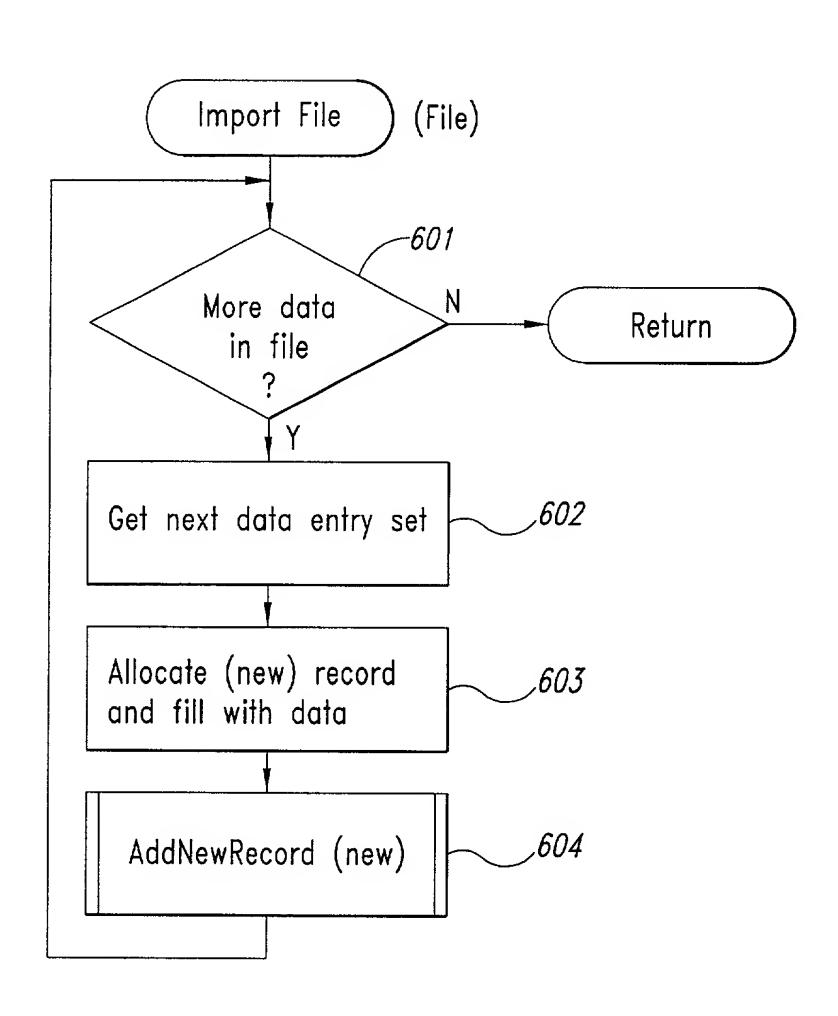


Fig. 6

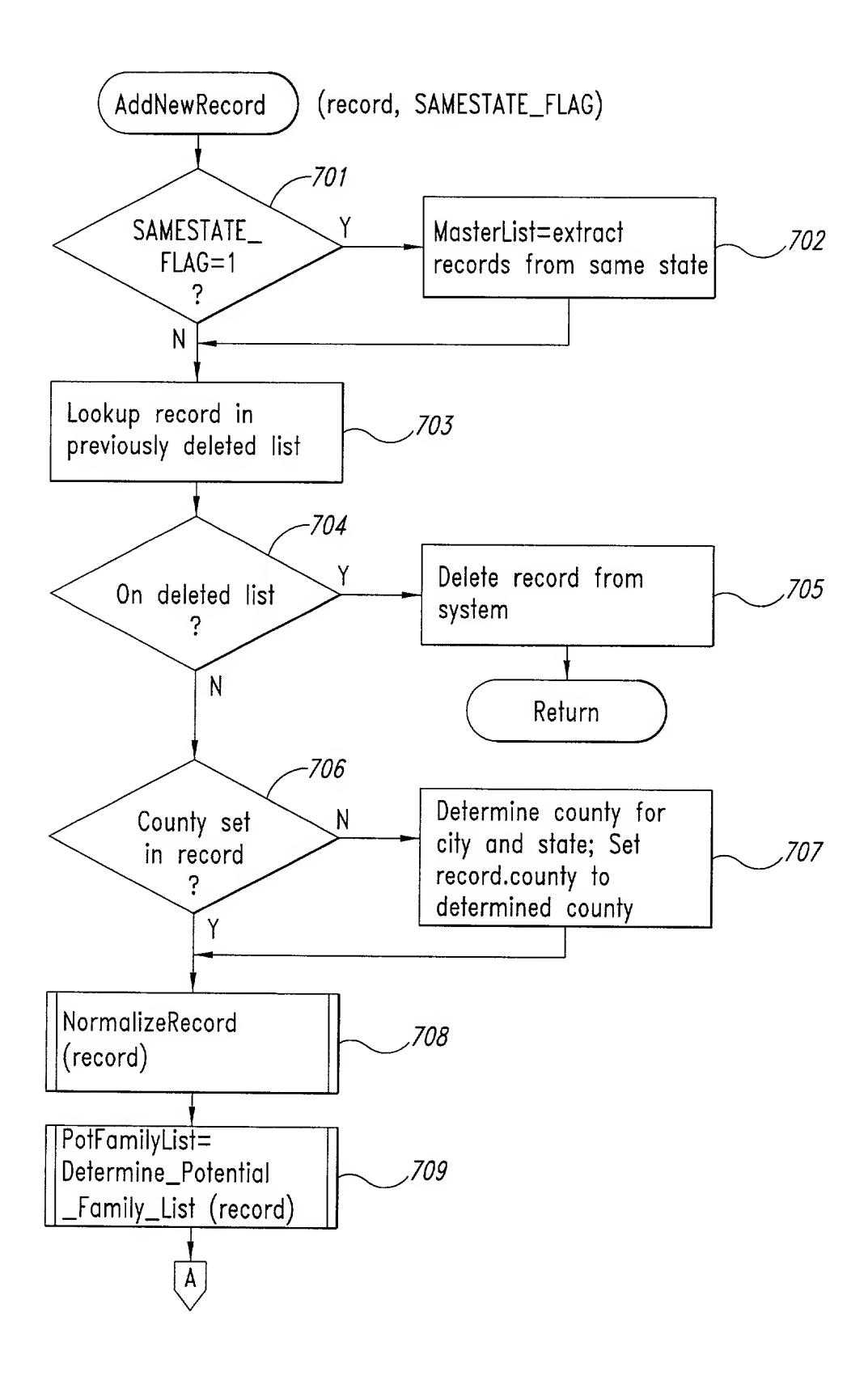


Fig. 7A

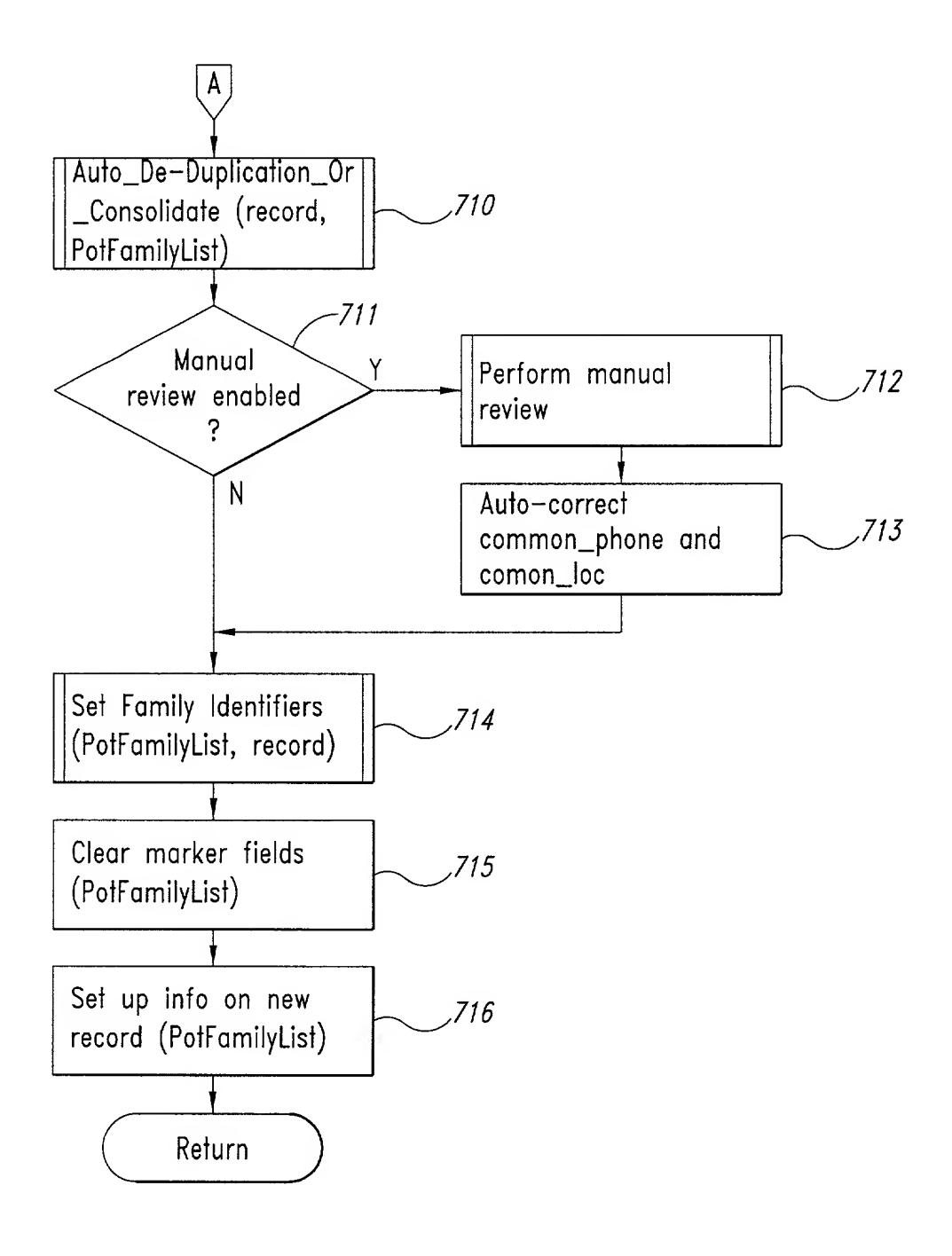
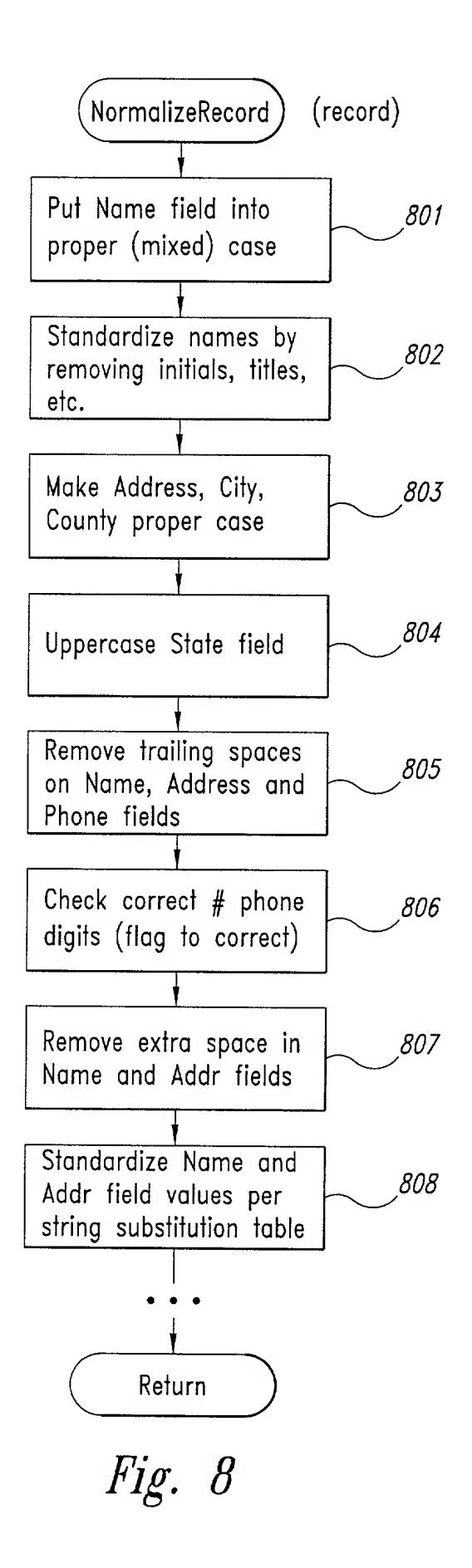


Fig. 7B



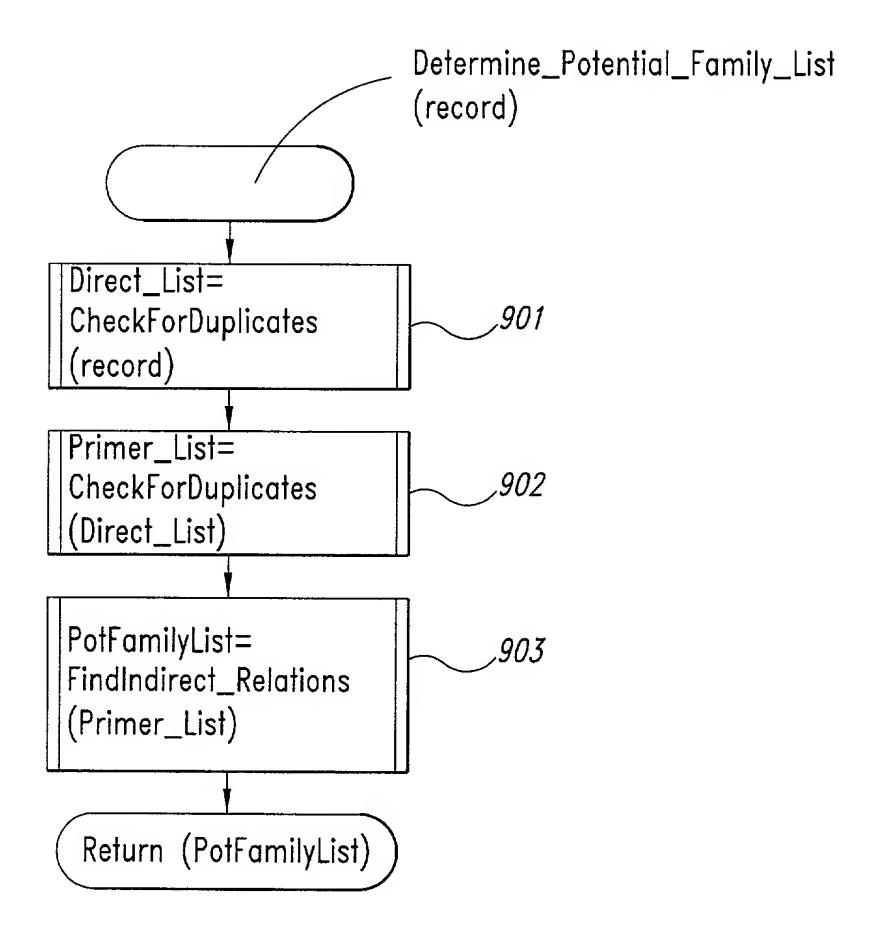


Fig. 9

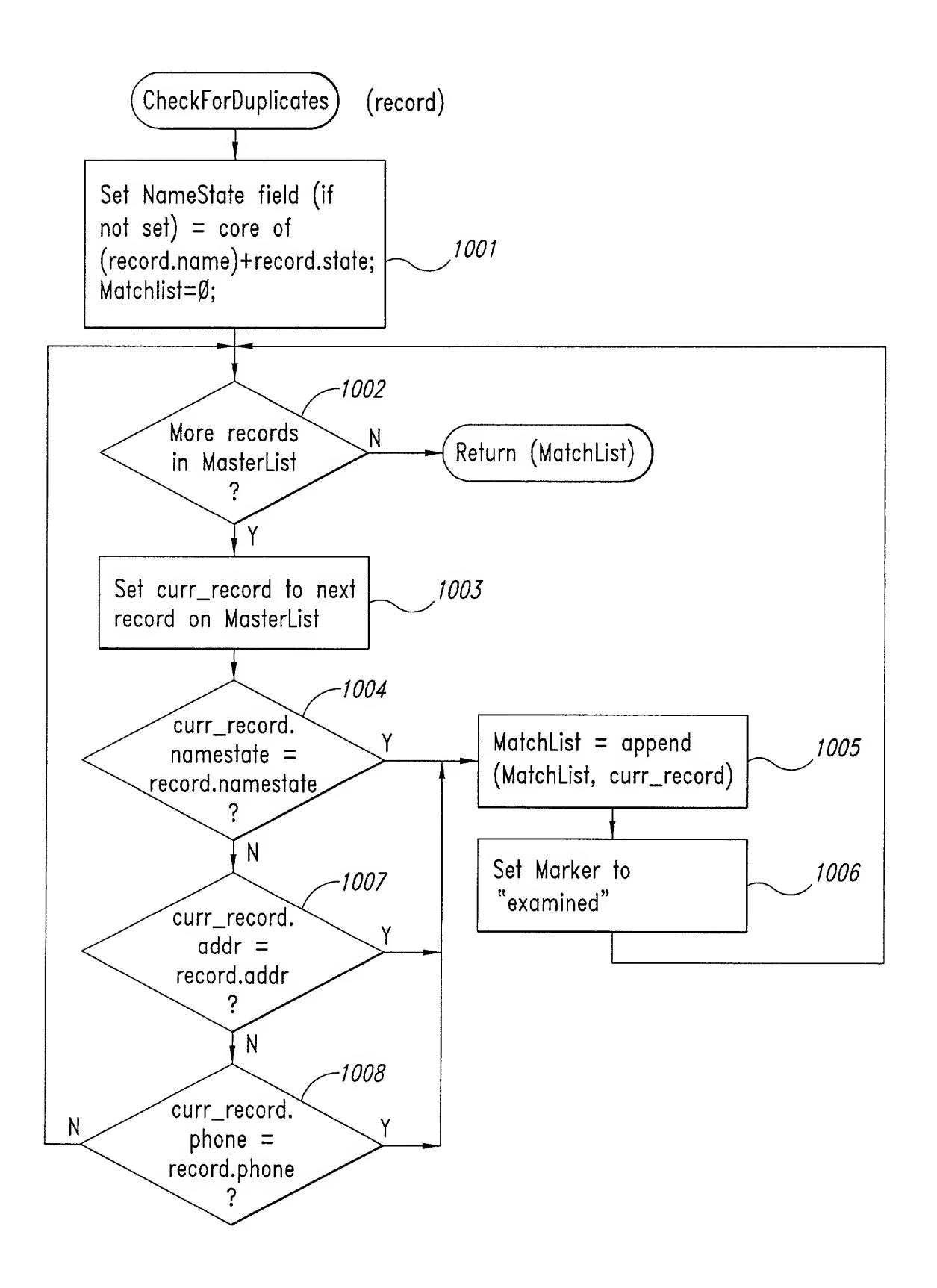


Fig. 10

Table 1: Results After Direct Check of New Record Summary: Record 9 located Record 1 (by Phone), Records

				Common	Common			
#	NameState	Address	Phone	Phone	Location	Family	Source of Match	1
	Fuel Processors, WA	701 First Avenue	367-3319			51	Phone	1101
	Fuel Processors, WA	12521 30th Street NW	526-6149	₩.		51		
	Fuel Processors, WA	222 15th Avenue NE	555-1212	8	හ	51		
	Oil Re-Refining, WA	345 Center Street	526-6149	-		51	NameState	
	John's Oll-Refining, WA	222 15th Avenue	555-1212	લ	G	51		
	John's Oil-Refining, WA	1600 Oak Tree Road	614-9200			51		
	John's Oil Pickup, WA	11750 33rd Place	417-6000		33	7	Address	
	John's Service, WA	11750 33rd Place	417-3251		33	7	Address	
	Oil Re-Refining, WA	11750 33rd Place //	367-3319				NEW RECORD	

Table 2: Potential Family List (Found Set) After Direct Check (Sorted by NameState)	ter Direct Check					1102	
		Common	Common			Potential	Record to
# NameState	Phone	Phone	Location	Family	Source of Match	Family	Check
1 Fuel Processors, WA	367-3319			51	Phone	Yes	-
7 John's Oil Pickup, WA	417-6000		33	7	Address	Yes	-
8 John's Service, WA	417-3251		33	7	Address	Yes	~
4 Oil Re-Refining, WA	526-6149	•		51	NameState	Yes	-
9 Oil Re-Refining, WA	367-3319				NEW RECORD	Yes	_

Found

− a a 4 a

Table 3: Results After Direct Check of Records in Table 2

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and Record 3 (by NameState), marks them as Potential Family members, Results After Loop 1 Summary: Record 1 located Record 9 (by Phone), Record 2 (by NameState) and adds them to the end of the list.

					X				, ,	
·					Common			Potential	Record to	Found
*	NameState	Address	Phone	Phone	Location	Family	Source of Watch	Family	Chark	Order
+	Filel Propesore WA	704 Einst Augang	20.7 2240					, carring	VIIOUR	
•	CAL GOOGGOOD IN		A1.00-100			51	Record to Check	Yes	₹	•
っ ト	John's Oil Pickup, WA	11750 33rd Place	417-6000		33	7		2 >	. 4	٠ (
•			-		3	_		1 45	_	7
" 0	Jonn's Service, WA	11750 33rd Place	417-3251		33	7		Yes	•	Ç
`	The Doctor and the			•)	-		200	-	•
, † 	On re-remuing, wa	/ 345 Center Street	526-6149			57		Yes	۳	*
0	Oil Re-Refining M/A	/ 14750 22rd Diana	0700 100	•		•	i	3	ta.	•
<i>y</i>		יייייייייייייייייייייייייייייייייייייי	201-2218				Phone	Yes	~ ~	īΩ
2 -	Fuel Processors, WA	/ 12521 30th Street NW	526-6149	•		r.	NamoState	\ \ \	•	વ
- C	The The second 1474)			5		רטח	-	0
?	ruel Processors, WA	ZZZ 15th Avenue	555-1212	~	ത	51	NameState	Yes	•	7

Subsequent Results:

Address), both previously found. Seeing that a Common Location ID has been already with this Address), the Common Location number is copied over to other records with the Summary Loop 2: Record 7 located Record 8 (by Address) and Record 9 (by Address), both previously found. Seeing that a Comben assigned to this record (indicating there are already at least two records with this Address), the Common Location number is same Address that have an empty Common Location field, e.g. Record 9. Summary Loop 3: Record 8 located Record 7 (by Address) and Record 9 (by Address), both previously found. Summary Loop 4: Record 4 located Record 2 (by Phone) and Record 9 (by Address) and Record 9 (by Address), all previously found. Summary Loop 5: Record 9 located Record 1 (by Phone), Record 7 (by Address) and Record 9 (by Address), all previously found.

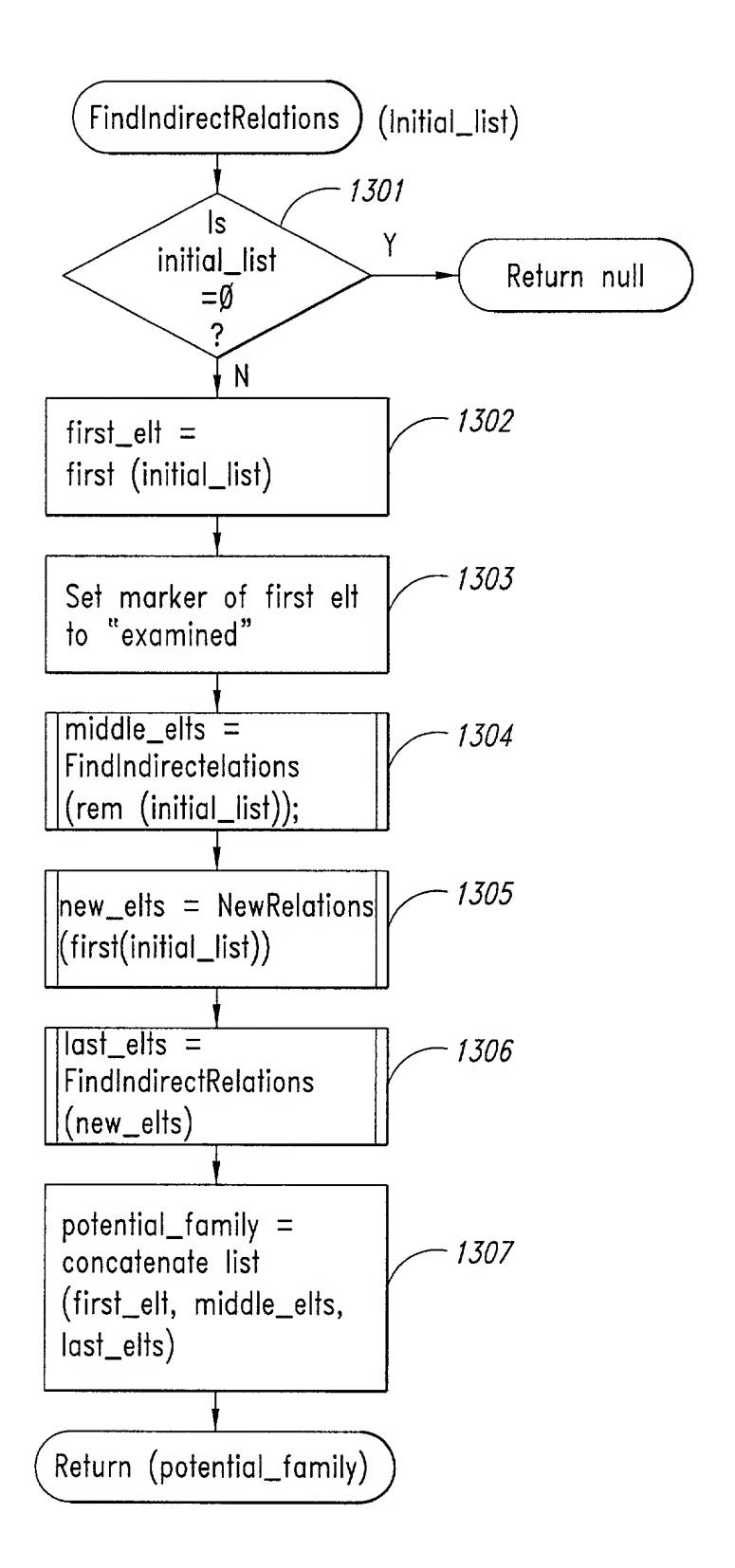


Fig. 13

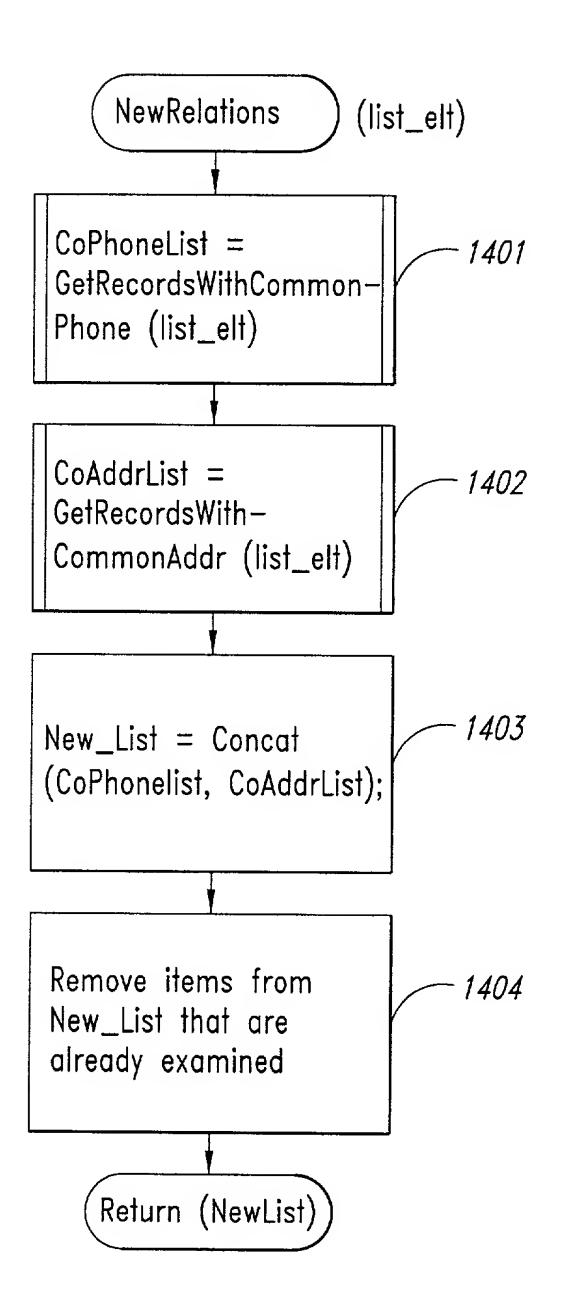


Fig. 14

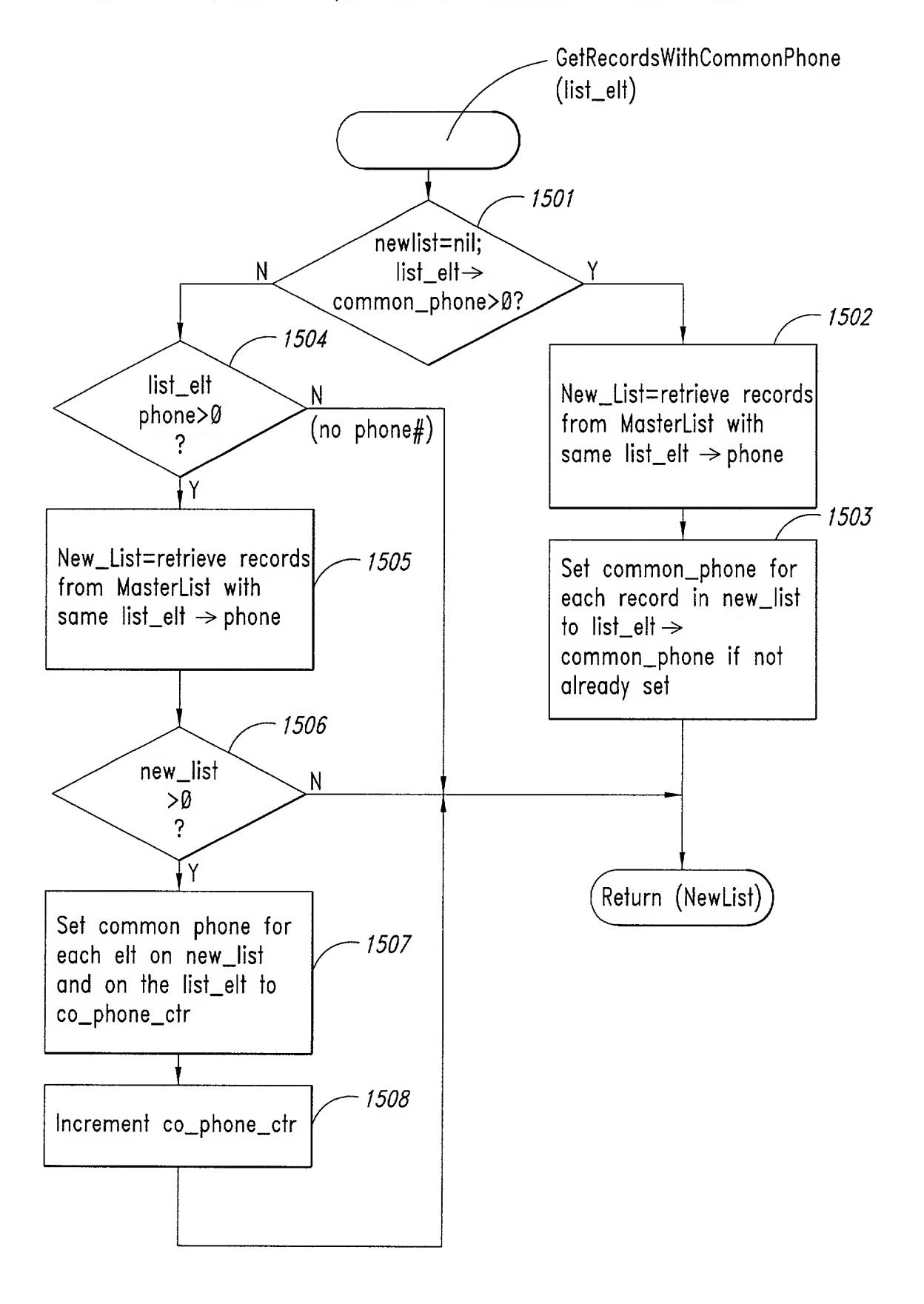


Fig. 15

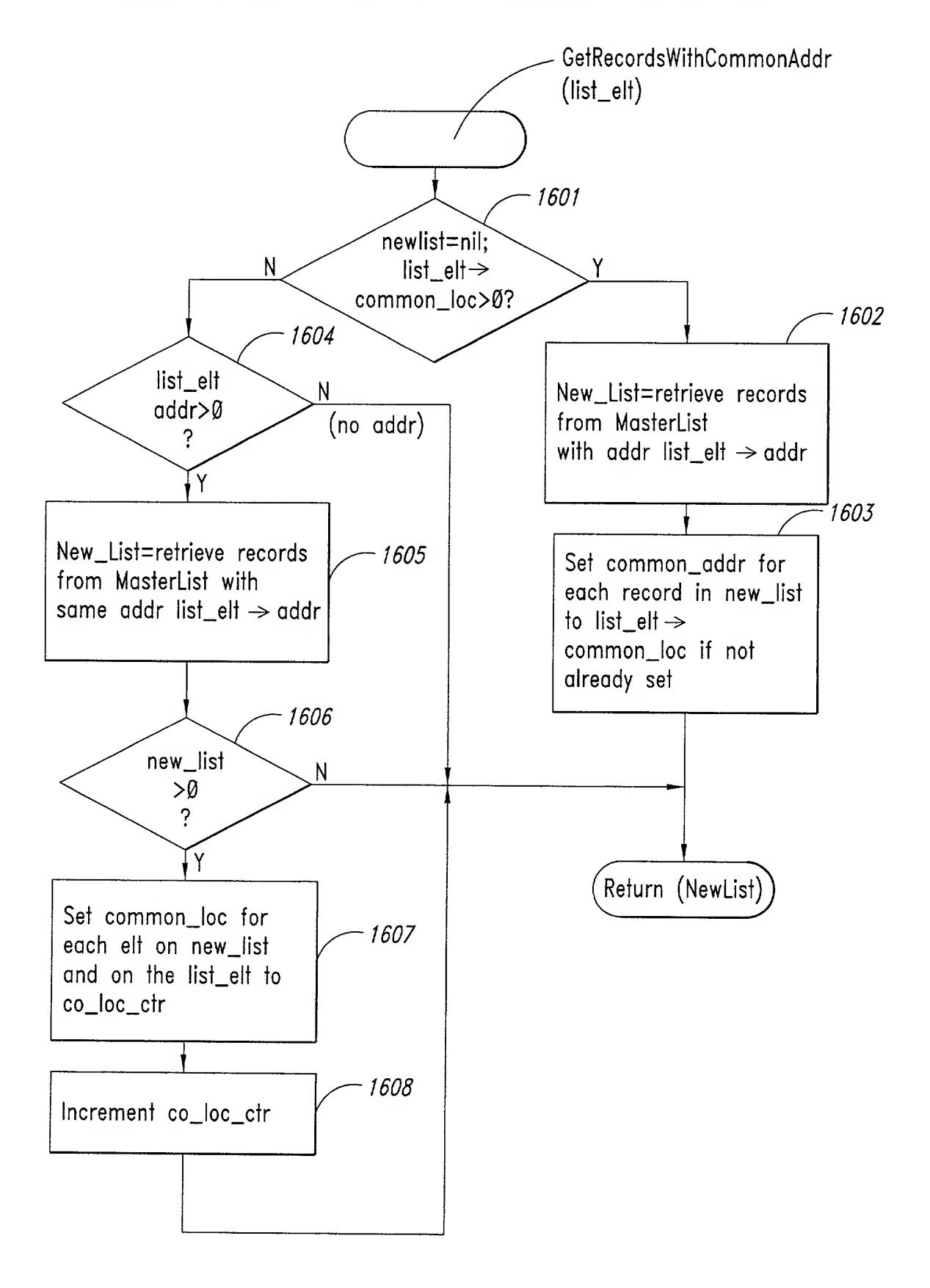


Fig. 16

Title: METHOD AND SYSTEM FOR IDENTIFICATION AND MAINTENANCE OF FAMILIES OF DATA RECORDS Inventor(s): Kelly Meinig

Found

Order

- 23 4 5 6 7

Express Mail No. EV064993065US

Docket No. 480142.401

Results After Indirect Search

	al Record to	
	Potentia Family	Yes Yes Yes Yes
1011	Source of Match	Record to Check Phone
	Family	51 7 7 51 51
	Common Location	93 33 9
	Common Phone	2
ily found.	Phone	367-3319 417-6000 417-3251 526-6149 367-3319 526-6149 555-1212
l ecord 9 (by Phone), previous	Address	701 First Avenue 11750 33rd Place 11750 33rd Place 345 Center Street 11750 33rd Place 12521 30th Street NW 222 15th Avenue
Table 4: Results After Loop 1 Summary: Record 1 located Record 9 (by Phone), previously found.	# NameState	1 Fuel Processors, WA 7 John's Oil Pickup, WA 8 John's Service, WA 4 Oil Re-Refining, WA 9 Oil Re-Refining, WA 2 Fuel Processors, WA 3 Fuel Processors, WA
⊢ ∾[

Table 5: Subsequent Results

Note: Refer to Table 1 above for a complete list.

Note: Refer to Table 1 above for a complete list.

Summary Loop 2: Record 7 located Record 8 (by Address) and Record 9 (by Address), both previously found. Seeing that a Common Location field, e.g. Record 9.

Summary Loop 3: Record 8 located Record 7 (by Address) and Record 9 (by Address), both previously found.

Summary Loop 4: Record 4 located Record 2 (by Phone), previously found.

Summary Loop 5: Record 9 located Record 1 (by Phone), Record 7 (by Address) and Record 9 (by Address), all previously found.

Summary Loop 5: Record 2 located Record 4 (by Phone), previously found.

Summary Loop 7: Record 3 located Record 5 (by Phone and Address), a new record and adds it to the bottom of the list.

			Common	Common			Pofential	Docure to	E 5110
NameState	Address	Phone	Phone	location	Family	Source of Match		Chair to	
Fuel Processors, WA	701 First Avenue	367-3310			5.4	Socied of match	ranni	CIBCA	Craer
					<u>.</u>		Yes		•
John's Oil Pickup, WA	11750 33rd Place	417-6000		60	7		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	. 1	. (
John's Comise 1476	100001177			3	•		יים	•	\
Collina Octavice, VVA	11/50 33rd Place	417-3251		er er	^		\	1	c
Oil Do Doffeing 1878)	•		20	•	7
CI DOLDER DE MAR	845 Center Street	526-6149	4		<u>ب</u>		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1	•
Oil Do Dofining 1875	こうな アイクグ ひがた ママ		•	,	-		20 -	•	t
	11/50 33rd Place	367-3319		9			Yes	^	ч
File Dropocone 147A		07.70	•)			2	•	0
- 45 - 1000000 AA	MN leans line 17c71	3Z0-0149	_		Ç,		Yes	7	Œ
Fuel Processors WA	222 15th Avenue	FEE 1010 V	ŗ	C	, ,		3	•	>
	After some control and	7 7171-000	٧	מ	ر م	Kecord to Check	Se)	7	~
John's Oil-Refining, WA	222 15th Avenue V	KKK_1010	ç	C	74		;	- 1	• 1
		200-1212	4	מ	_	Flone and Address	70 X		α(

#**〒784923**5

Table 6: Complete Results After Loop 8 of Indirect Search Summary: Record 5 located Record 3 (by Phone), previously found, and the loop ends.

Potential Record to Family Source of Match Family Check (Yes 8 Yes 8		camments record a rocated record a (by ritorie), previously found, and the loop ends.	Joid S (by Filone), previousi	y found, and tr	e loop ends.			1801			
701 First Avenue 367-3319 51		f NameState	Address	Phone	Common Phone	Common Location	Family	Source of Watch	Potential Esmity	Record to	Found
11750 33rd Place 417-6000 33 7 7 8es 11750 33rd Place 417-3251 33 7 7 8es 11750 33rd Place 417-3251 1 750 33rd Place 367-3319 1 51 8ecord to Check 7es 1252 15th Avenue 555-1212 7 2 9 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 2 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 9 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 9 9 6 51 8ecord to Check 7es 122 15th Avenue 555-1212 7 9 9 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		Fuel Processors, WA	701 First Avenue	367-3319			51		Ven	Secr	Japio
11750 33rd Place 417-3251 33 7 7 8s 7 8s 7 7 8s		John's Oil Pickup, WA	11750 33rd Place	417-6000		33	5 ^		C - C	0 0	- (
345 Center Street 526-6149 1 7es 11750 33rd Place 367-3319 1 33 51 12521 30th Street NW 526-6149 1 7es 222 15th Avenue 555-1212 ▼ 2 9 51 Record to Check 7es		3 John's Service, WA		417-3251) (f	- ^		se >	* 0	N (
11750 33rd Place 367-3319 7es 12521 30th Street NW 526-6149 1 51 Phone 555-1212 Yes 748 768 768 768 768 768 768 768 768 768 76	V	Oil Re-Refining, WA	345 Center Street	526-6149	₹-	3	- L		S = >	o o	v) v
12521 30th Street NW 526-6149 1 51 222 15th Avenue 555-1212 2 9 51 Record to Check	(U)	Oil Re-Refining, WA	11750 33rd Place	367-3319	•	33	5		- es - es	0 00	4 , n
222 15th Avenue 555-1212 → 2 9 51 Phone 555-1212 → 2 9 51 Record to Check	· · ·	Fuel Processors, WA		526-6149	~	}	rc.		<>	O 0	n u
222 15th Avenue 555-1212 7 2 9 51 Record to Check	⟨ *}	Fuel Processors, WA		555-1212	7	O.		Phone	- X	oα	10
	47	John's Oil-Refining, WA	222 15th Avenue	555-1212 7	2	တ		Record to Check	X - X	οα	- α

Fig. 18

Table 7: Alternative: Using NameState in the Embedded Search
Note: NameState is not included in the Embedded Search loop as shown herein, although it can be. In this case, in the event that a Record 6 exists that matches
Record 5 only off of the NameState, Record 6 would not have been located by the Embedded Search on Record 5. The reasoning behind excluding the NameState in the
Embedded Search is due to the extended relationship of Record 6 to the original set of records being searched on. It is, at this point, fairly removed and the Family 1D loses
some meaning. While this is not a common occurence, a final loop searching off of the Families present in the final set of found records can find any remaining missing
family members, thus picking up Record 6 if desired. Alternatively, the NameState can be included in the Embedded Search.

##	NamoStato	A 2000		Common				Potential	Record to	Found
		Address	rnone	Phone	Location	Family	Source of Match	Family	Check	Order
	Fuel Processors, WA	701 First Avenue	367-3319			51		\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		3
7	John's Oil Pickin MA	44750 22rd Dloop	747 0000		6	5 1		ה ה ה	> >	_
. (コンロー コンク・ハン・	417-0000		33	_		Yes	đ	^
Σ	John's Service, WA	11750 33rd Place	417-3251		33	7) } }		; c
7	Oil Do Dofining 1878	2 45 Cartain Class		•	3	•		รม	מ	٧٦
-	CHACLE STREET, VYA	040 Center Street	526-6149	~ ~		<u>5</u>		Yes	o	~
ത	Oil Re-Refining, WA	11750 33rd Place	367,3310		00	•		3	5 ()
•			6100-100		o O			Yes	ത	'n
V	ruel Processors, WA	12521 30th Street NW	526-6149	_		10		\ \ \	O	: (1
m	Fuel Processors, WA	222 15th Avenue	555,4040	• •	c	, u		3 - :	י מ	D i
Į.			7171-000	7	ภ	ō		Yes	တ	_
ဂ	John S Oil-Kenning, WA	222 15th Avenue	555-1212	7	ග	51	Record to Check	Yes	σ	α
ထ	John's Oil-Refining WA	1600 Oak Tree Bood	644 0000					3	י נ	•
	Car (Summa)	LOW CAN LIES NOAU	014-3200			<u>ر</u>		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	σ	σ

Fig. 16

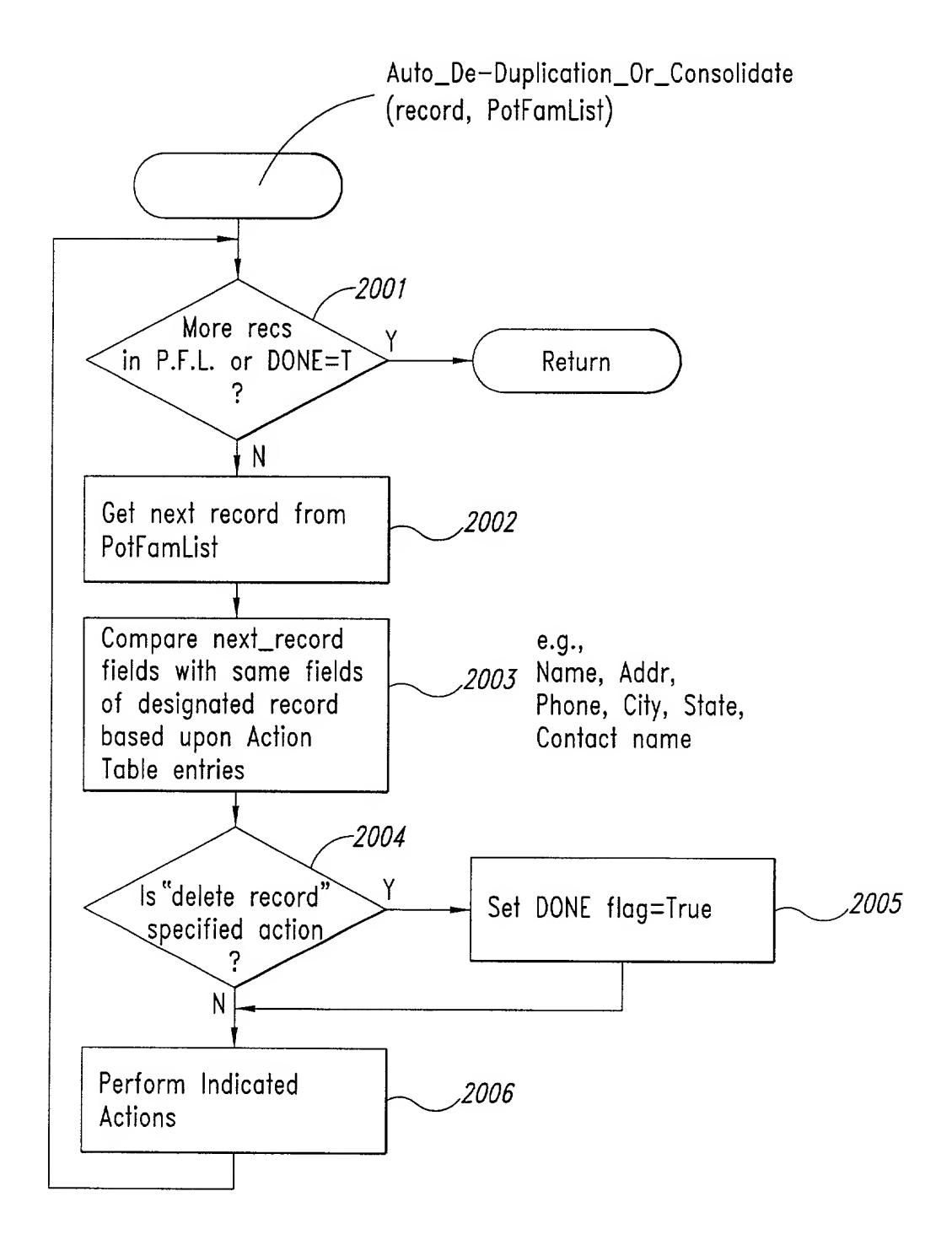


Fig. 20

Automatic De-Duplication

Table 8: Results After Dedup Summary: Common Phone IDs are assigned to Records 1 and 9.

				Common	Common			100000000000000000000000000000000000000		
4								rotential	Record to	round
*	1	Address	Phone	Phone	Location	Family	Source of Match	Family	Chack	Order
_	Fuel Processors, WA	701 First Avenue	367-3319	۲.		51			2000	ionio,
£			31	>		5		165	מכ	•
•	John's Furnace Repair, WA	11750 33rd Place	417-6000		33	7		\ \ \ \ \	. c	
_	John's Consiso 1878)	•		201	D	¥
<i>-</i>	COLLEG COLVICE, VAA	11/30 33rd Place	417-3251		33	_		Voc	a	c
7	Oil Re-Refining 1876		07.70 001	•)	- [20	n	o
г 		oto Center offeet	526-5149	, -		21		Yes	σ	~
<u> </u>	Oil Re-Refining WA	11750 33rd Diace	257 2240	c	23	,		3	י כי	t
- (B100-100	ŋ	9			Yes	σ	ĸ
~	Fuel Processors, WA	12521 30th Street NW	526-6149	***		'n		;	• () (
ر. -	First Droppes 1878			• (1	5		SD -	ממ	۵
)	C del Processors, VVA	777 15th Avenue	555-1212	~	ග	51		Yac	o	7
rt.	John's Oil-Refining MA	222 4 Est Avenue	0707 880	i (. (Ď	•
		aniiaAy inci 777	7171-000	V	מכ	51	NameState	Yes	σ	α
©	John's Oil-Refining WA	1600 Oak Tree Dood	644 0000			4)	>
		TOOD CAN TIES NOAU	014-9200			ည်	Kecord to Check	Yes	O	σ
									•	•

Fig. 21

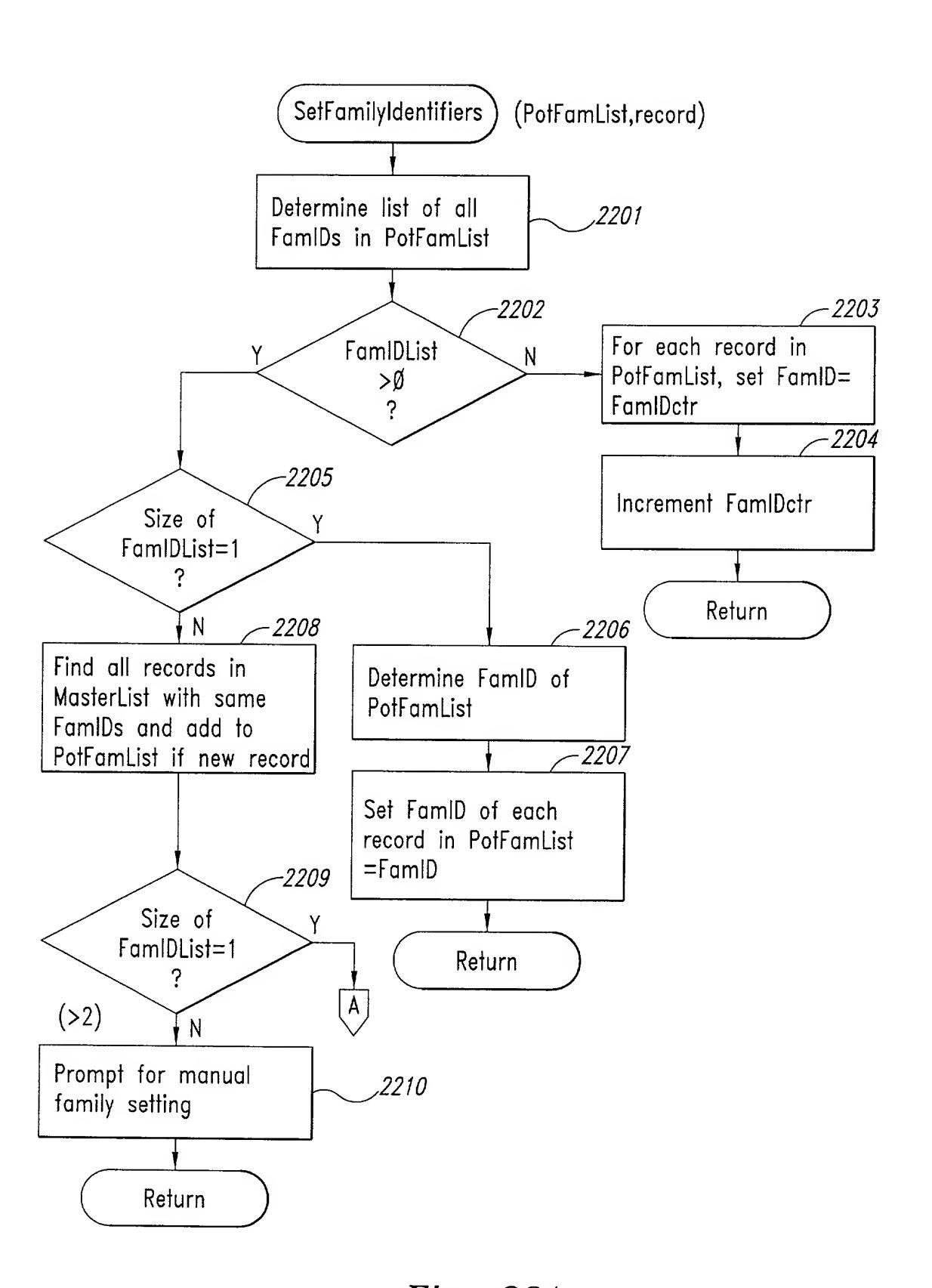


Fig. 22A

The state of the s

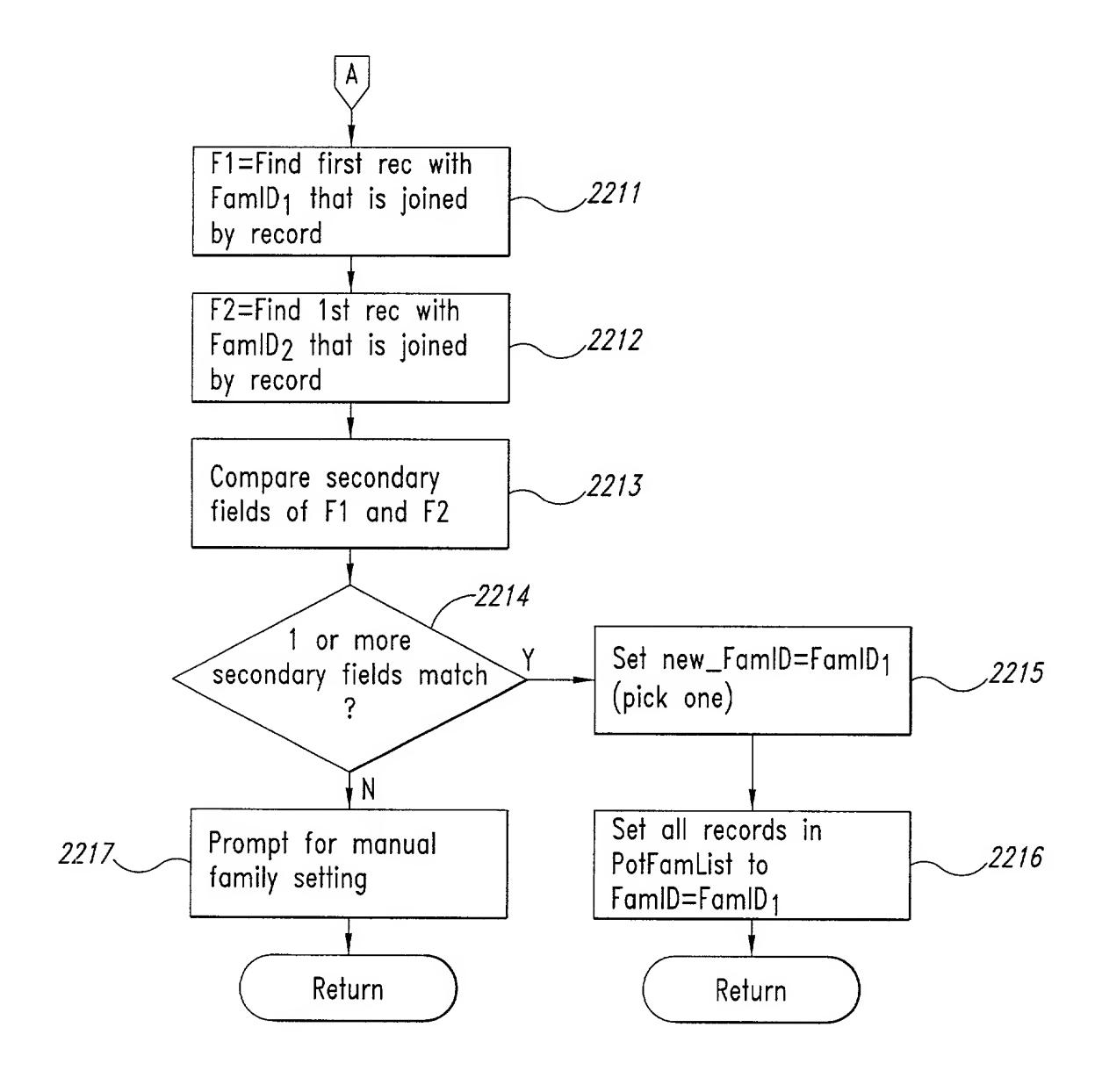


Fig. 22B

Match

Phone Match Group 29 29 29 29 29 29 Source of Match Phone **NEW RECORD** NameState 2301 Family य राज्य राज्य Common Location ဗ္ဗ ဗ္ဗ 9 0 Common Phone - 01 - 04 Phone 367-3319 367-3319 417-6000 417-3251 526-6149 555-1212 555-1212 614-9200 526-6149 Table 9: Marriage (Coalescing Families)
Summary: Family 51 and Family 7 are joined by the new record. Address
701 First Avenue
12521 30th Street NW 222 15th Avenue NE 345 Center Street 1600 Oak Tree Road 222 15th Avenue NE 11750 33rd Place 11750 33rd Place 11750 33rd Place John's Oil-Refining, WA John's Oil-Refining, WA Oil Re-Refining, WA John's Oil Pickup, WA John's Service, WA Fuel Processors, WA Fuel Processors, WA Fuel Processors, WA Oil Re-Refining, WA NameState 2 3 9 9 N 8

Phone Group 29 29 29 29 29 29 29 30 87 Source of Match Phone **NEW RECORD** NameState 51 51 51 51 Common Location 33 6 Summary: Family 7 is inappropriately marked by the new record. A Family is not assigned. Phone - 0 - 0 **Phone** 367-3319 526-6149 555-1**212** 367-3319 417-6000 262-8877 555-1212 614-9200 526-6149 Address
701 First Avenue
12521 30th Street NW 222 15th Avenue NE 345 Center Street 222 15th Avenue NE 1600 Oak Tree Road 1000 Main Street 1000 Main Street 1000 Main Street John's Oil-Refining, WA John's Oil-Refining, WA Fuel Processors, WA Fuel Processors, WA Fuel Processors, WA Oil Re-Refining, WA Ace Hardware, WA Ace Engineering, WA Oil Re-Refining, WA NameState 0 m 4 m 0

Table 10: Unrelated Families

Fig. 24